



LANGUAGES

GRANTING ALL STUDENTS ACCESS TO NEW SKILLS

FOR LEARNING

Essays by

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TALENT SPEAKS VOLUMES

A single great teacher can change your life by introducing you to a new language, helping you master a new skill or opening a door you never knew was there. That's why every year we award the Fishman Prize for Superlative Classroom Practice: to celebrate a select cohort of public school teachers who demonstrate exceptionally effective teaching with students from high-poverty communities. Founded in 2012, the Prize is named for Shira Fishman, a TNTP-trained math teacher who has received local and national recognition for her achievements at McKinley Technology High School in Washington, D.C., where she continues to teach today.

Each year, our selection process becomes more rigorous. In 2014, more than 820 teachers applied. About 100 were invited to submit teaching videos, and 21 were selected as semi-finalists for unannounced classroom observations by TNTP. Ten finalists were interviewed by an expert panel of judges including Shira Fishman—and just four were named winners.

The winning teachers receive \$25,000 each—one of the country's largest monetary awards for practicing teachers. Just as importantly, during the summer of their award year, they collaborate during a month-long virtual residency, reflecting on their classroom practices, exploring the larger issues that shape their profession and contributing to TNTP's own efforts to understand and support great instruction.

The 2014 residency included visits to New York, Silicon Valley and Washington, D.C., where the winners met with top educators, writers, researchers, policymakers and philanthropists. It was a busy summer that offered the winners a chance to explore the education landscape while making their voices heard to decision-makers and thought leaders eager to hear about their classroom expertise.

We believe that when four of the nation's best teachers dedicate a month to reflecting on their schools, their students and the hard work of teaching, the entire profession wins.

As always, a central part of the residency experience is the chance for the winners to capture some essential elements of their practice in writing, telling the stories of their classrooms in their own voices. We publish these essays in an annual collection highlighting the skills and strategies the Fishman Prize winners use to achieve extraordinary results.



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"I'm in awe of the 2014 Fishman Prize winners and feel so lucky to be associated with this group of teachers. Their passion for their students, and for education in general, was evident in every aspect of the selection process, and is even more obvious when spending time with them in person. They have already accomplished so much in their classrooms and have made such an impact on hundreds of students—and they are clearly not slowing down!"

-Shira Fishman

CLASSROOMS WITHOUT LIMITS

For many students, grappling with a new subject can feel like learning an entirely new language—and in many cases, the subject is a new language.

Great teachers can make these new languages seem approachable, exciting and familiar. They build students' fluency over time, whether that means learning English, understanding physics or calculus, or breathing life into a musical instrument.

Helping students gain that fluency is a huge challenge for teachers, and one reason why effective instruction is so important. New and daunting subject matter is part of everyday life in the 21st-century classroom, yet for many students—especially students in high-poverty schools—those challenging subjects can feel off-limits. This is the issue our 2014 Fishman Prize winners chose to address in these essays: How can teachers give all students, regardless of background, the tools and support they need to master entirely new skills and have equal access to life's opportunities?

The question could not be timelier. As school systems across the country tackle increasingly rigorous academic standards under the Common Core, teachers have to be ever vigilant that those new skills are accessible to all students. The Fishman Prize winners seem to do that effortlessly, helping their students build community, confidence and proficiency in

skills as varied as debate, physics, calculus and music. Yet turning students into fluent thinkers requires fluent problem-solving on behalf of the teacher—a blend of the right content, the right delivery and unwaveringly high expectations for all learners. In slowly but surely translating the new into the familiar, this year's Fishman Prize winners help their students master subjects that will help them as students in the short term, and as college- and career-ready adult learners in the long term.

Their results in the classroom speak for themselves. English Language Learners in Oakland, California vigorously debate the tragic milestones of World War II—in the fourth grade. High school students in southern California and South Tampa, Florida excel at the Advanced Placement science and math courses that many adults believe are beyond their reach. And in a tiny band room in Chicago, students who had never before held a musical instrument learn to own every note in a complex arrangement.

No single essay can capture what makes these classrooms so amazing, and the writing here offers just a glimpse into the teaching you might see on display on any given school day. Yet together, these essays are proof that great teachers impose no limits on what their students can learn—and refuse to allow their students to impose limits on themselves.

Read on to visit four incredible classrooms where students are accessing new worlds and opening doors that were previously believed to be beyond them. We hope the 2014 Fishman Prize winners can show you what's possible.

STEVENS SANDERS

9th–12th GRADE BAND UIC College Prep Chicago, IL

"I refuse to let my students think that music is off-limits to them or that they are not talented enough to perform in an ensemble," says Steven Sanders, who is the high school band teacher and music department chair at UIC College Prep, part of the Noble Network of Charter Schools in Chicago. "Music is for all."

A Chicagoan by birth, Steve has long held a passion to work with disadvantaged youth. When students enter his classroom, 90 percent of them have never taken a basic music class, held an instrument or read music before. Yet, with nearly 200 students, Steve routinely leads the school's ensembles to first and second place rankings in city and statewide competitions. In the Jazz Ensemble's first year of existence last year, his students placed eighth at the Berklee College of Music National High School Jazz Festival, where they competed against schools with longstanding traditions of musical excellence.

Steve's students learn rapidly due to his high expectations and attention to every detail. When he noticed inattentive students gazing at the blank walls during class, for example, he had local artists paint the walls with murals of musical concepts. Entering his classroom is an immersive experience in music.

"We've been enthralled by Steve's use of music as a pathway to long-term success for his students in education and in life," says TNTP president Tim Daly. "When his students see how much they can accomplish when they approach their instruments in the right way, they know how much they can accomplish by approaching any new challenge in the right way. You start to wonder why every high school student in America isn't taking four years of music."

In Steve's essay, "Own Your Sound," he describes how his focus on deep discipline helps his students become stronger musicians—and better learners beyond the band room.



OWN YOUR SOUND

In my class, students learn quickly that dedication, perseverance—and mistakes make you a stronger human being.

Click...Click...Click...

The metronome beats through two loudspeakers at the front of my classroom. As my afternoon Beginning Band class finishes playing an eight-measure exercise, I pause the beat and wipe sweat from my forehead.

"Okay, how can we make this better?" I ask. "I want everyone to put their finger on a spot where they made an error."

Students search their music to see what they must do individually to improve the next repetition.

"Got it?" I see nods of agreement, looks of determination. I press play on the metronome. "Here we go. One... two...breathe..."

As the students begin, I notice a marked improvement in tone, intonation and note accuracy. Circulating to give feedback, I hear Dan play a third space C with great tone. I'm floored and immediately stop the class.

"Dan! Oh my goodness, bro! You hit the high C. Did you hear that?"

Dan says, "Yeah, I...I guess I did."

"You've been struggling with that note for a few weeks now. What happened? Why are you able to play it today?" I just had to know.

Right in front of the whole class, Dan says, "I've been practicing at home every day, like you said."

I take the time to slap him high five and celebrate his progress. I want the whole class to see a real life example of hard work and deep discipline paying off.

For the students I teach, my classroom is unlike any other. It's almost as if it were its own kingdom within the school. For us to be successful, each and every student must realize that the extreme rigor in my class is all about developing and maintaining a high level of discipline. You don't become a great musician—or a great student—overnight. It begins with having a high regard for even the smallest details.

The Utmost Respect

"Mr. Sanders, I want to play the trumpet," says one of my freshmen Beginning Band members, pointing to an instrument. While I love the enthusiasm and sense of pride in his choice, he's pointing to a clarinet.

This is how little some of my students know about musical equipment, and why it's so important for my students to learn to respect the instruments they will eventually master.

A reading teacher would have a problem with students throwing books about as if they weren't valuable. A biology teacher would get upset at the sight of expensive microscopes being handled without care. We are blessed to have band resources at our disposal. With the most expensive classroom in the building, we have an obligation to treat this treasure trove with the utmost care and respect. Under no circumstances do I tolerate the misuse of band equipment. This includes instruments, music stands, cleaning supplies, percussion accessories, band chairs and anything else that we use in my room.

In the first semester of this past year, our band program received a generous grant, including instruments that were significantly more expensive than our current ones. For the first couple of weeks after we received them, however, the gleaming instruments sat idle in the front of the room. Students were only allowed to look.

If they showed me they could take care of their current instruments, I told them, I would be willing to let them play the new ones. One of these new instruments was an \$8,000 tuba. When I removed it from the case and set it in the front of the room, all of my sophomore tuba players practically salivated from behind their student models.

Deep discipline encourages students to strive for perfect performances even when the music they are playing is full of mixed metered measures.

Finally, a few months after the new instruments arrived, Davion, my first chair tubist, got a chance to play the new trophy. I loved seeing him handle it as if it were his most prized possession. Owning your sound starts with respecting the instrument that forms it.

Deep Discipline

The great jazz trumpeter and music educator Wynton Marsalis put it very plainly: "Invest yourself in everything that you do. There's fun in being serious." The way that I have set up my class is largely based on discipline.

Discipline is usually thought of as punishment, but I do not refer to discipline in the punitive sense. It goes much deeper than that. The word is derived from "disciple," which means "learner." In essence, discipline is the act of becoming a student.

To succeed in my class, students must focus and remain engaged for extended periods of time. They must develop the art of going deep inside of themselves to practice a craft for mastery. They also must learn how to transfer knowledge and draw on all parts of their experience in education to be the best musicians that they can be.

Cuban jazz trumpeter, pianist and composer Arturo Sandoval once said, "Blow your life through your horn." I believe

that a musical instrument lives the instant a student breathes their energy into it. The sounds that students produce on their instruments are totally theirs. They cannot hide from them. They must own their sound. I instill in my students a deep respect for the sounds they produce on their instruments by helping them to appreciate that everyone has an opportunity to sound great. The question I pose is: Are you disciplined enough to go after a great sound?

Deep discipline will cause students to lock themselves in a room until they master a passage of music on their instrument. Deep discipline makes students want to sit completely straight in their chairs for 75-minute class periods. Deep discipline encourages students to strive for perfect performances even when the music they are playing is full of mixed metered measures, syncopated rhythms and rapid chromaticism. And, oh yes, deep discipline is what Dan developed in order to be able to finally play a third space C on the trumpet.

That's deep discipline. And in my class, it's transformative. It's what allows us to change from individuals into a band, from students into musicians. Discipline unlocks possibilities.

A New Language

"Music happens to be an art form that transcends language," according to the great jazz musician Herbie Hancock. In my estimation, music is a much loftier language than the spoken word. Yet the steps to learning a spoken language have much in common with learning to read music. Whole, half, quarter, eighth and sixteenth notes are the "words" in which music finds its voice, and fluency in reading them is essential to great musicianship.



Changing from individuals into a band, from students into musicians.

Each year, more than 90 percent of my students come to me without any prior knowledge of how to read and understand musical notes and symbols. Spoken language has programs like Rosetta Stone and the Pimsleur Method. In my classroom, students become familiar with count/position/play, a method designed to help students when practicing on their own. They will use it as a step-by-step process as they encounter more challenging passages.

Let's take a closer look.

Count

If you come to my room, my students counting a rhythm together sound like disciples chanting a script in unison. Whether students have a big voice or a tiny one, they all buy into the notion that everyone must open their mouths and count. Some are naturally shy and timid the first couple of times that we engage in this activity. Periodically, I have to put my ear right up to their mouth and whisper, "I can't hear you." The more I do this, the more they hate it, but we only get better as a group when everyone is involved and giving their very best. We have set goals as a group and each student has to be willing to own those goals and give 100 percent of their energy to achieve them.

Position

After we have counted the rhythm, we move to counting and positioning. Students recognize the letter name of the note while executing the correct position or fingering on their instrument. If you were to walk into my room, you'd think students were performing a scripted chant with hand motions. Everyone is uttering the counts, silently performing the passage on their instrument while I circulate to assess whether or not students are fluently moving through the exercise. My pointing finger or bulging eyeballs signal to students that they may want to consult a position chart.

Play

After a few rounds of counting and positioning, we are ready to play. At this point I pose a question to the class: "What is the number one rule of sight reading?"

The class responds in unison, "Don't stop."

This attitude is critical. Reading music can be challenging and the natural inclination of human beings is to stop at the first sign of a mistake. But if my students are pushing their ability, a certain amount of failure is inevitable. Embracing failure sends the message that it is okay to struggle and learn from mistakes. After we have read a passage, I ask if we can do better. Undoubtedly, students will be eager to try it again.

WHAT **BAND** MEANS

I hesitate to use the word "rules" when describing how I manage my classroom. Instead, I use the word "expectations." I strive to use language that makes my students think about their actions and what effect they will have on others. Instead of saying, "I command you to..." I say, "I expect that you will..." This simple switch in syntax suggests that students are in charge of their actions and know that if they do not meet an expectation at any given time, they are inhibiting the progress of the group.

My foremost expectations are based on the acronym BAND:

- B. Be positive
- A. Acknowledge that we need you
- N. Never give up
- D. Do better than your best

I once saw a poster featuring this acronym and decided to expand on it for the purposes of my classroom. If students do these four things each day they come into my room, I can guarantee their success. I let them know from the beginning that starting to play and continuing to play a musical instrument is not going to be an easy feat. I am not going to smile the entire time and sugarcoat my feedback. They are going to need to always be positive even in the face of difficulty and challenge. Giving up is selfish and can prove detrimental to the overall group. I've also taken the old cliché saying of 'do your best' and stepped it up. I believe that every student has a best effort to offer. I also firmly believe that students can do better than their best. Somehow, the best is just not good enough for me. The stakes are too high and I'm trying to produce lifelong musicians that will use music to open up doors of opportunity for themselves.

TEACHING AS AN EVOLUTIONARY PATTERN

Tony Williams is widely regarded as one of the most important and influential jazz drummers to come to prominence in the 1960s. He made a statement that has always resonated with me: "People try to get into drumming today, and after a year, they're working on their own style. You must first spend a long time doing everything that the great drummers do. Drumming is like an evolutionary pattern."

Teaching is a lot like drumming. Great teachers do not learn how to be great on their own. They study closely those who have come before them. I have two very close colleagues who work in the same charter school network and teach the same content. Our collaboration (mostly band banter) normally starts at 5:30 a.m. through text messages. Conversations range from new music to new methods. We are always pushing one another and looking for ways to get better at our practice. They both have been teaching longer than I have, and I owe everything that I am able to do in the classroom to them. Teachers everywhere can learn a thing or two from Tony Williams and start to view teaching as an evolutionary pattern.

Reading music is a linear process, and if an individual stops every single time they make a mistake, it will stunt the development of the skill. This is by no means easy. Anything that takes effort is worth it, and in a way, music education is a playbook for how to achieve in every area of life.

In my class, students learn quickly that dedication, perseverance—and mistakes—make you a stronger human being.

But...students will be students.

Every now and again, one or two will try to take shortcuts to learning the skill of reading music. They may take a pencil and lightly write the letter name underneath an unfamiliar note—a definite violation of the music reading process. Notes have a specific place on a staff. Every time a student writes in a note and looks at it while reading music, they are inhibiting their progress toward fluency. Only when students can automatically associate notes with the respective line or space where it

appears will they eventually be able to read any piece of music in front of them.

Early in the year, I caught Janiya writing in the notes and decided to ask her this question: "If you were learning a new language, would you write a translation underneath every passage that you had to read?"

She looked at me and said with a sigh, "That would defeat the point of learning a new language in the first place."

Ding ding ding! She got the point. When I saw that she understood, I walked over to her music stand with a grin, ripped her music out of the binder, balled it up and shot it in the trash. Then I calmly walked over to the extra music bin and pulled out a fresh copy. She gave me a tiny smile as I continued the lesson.

The Classroom as Our Stage

Discipline is the watchword in my class, but let's face it: the minds of my students will wander from time to time. Knowing this, I strive to make my room appealing to the eyes. When you walk in you are immediately inundated with murals on the walls, not just pictures of random musical symbols and inspirational quotes, but images of skills and concepts that students will visit and re-visit for the four years they are in my class.

If students are looking around the room, their eyes may land on the rhythmic pyramid. Here they can review whole, half, quarter, eighth and sixteenth notes. They may begin to look at the sound pyramid and to see how their instruments fit within a nicely balanced ensemble blend. They might look up at the order of flats and sharps to remind them how to figure out their proper key. If they've forgotten how loud to play mezzo piano, they may look up and see exactly where it fits into the dynamic scheme. And if they are really distracted, they can feast their eyes on the faces of great composers and musicians, past and present.

The room is so different from others in the building that students can't help but feel that they are in an altogether different kingdom. From the constant click of the metronome in the air to the beautiful artwork on the walls, students are immersed in this kingdom of music for the entire time they are with me.

Even though the space I deal with is not a typical band room with tons of square footage, I make the most of what I have. Every class has their own seating chart based on a standard model of two horseshoe shapes. Students have about a foot of space between them and the next person. This allows them to zero-in on their tone and further own their sound.







Count, position, play—just don't write in the notes.

Music is everywhere, and I'm everywhere, too. The floor plan allows me to get next to any student within two seconds. Informal feedback is a must for my students, and that means I need to be close enough to provide it in the moment. I can tap Katherine on the shoulder when she plays an incorrect rhythm. I can stand in-between the trombone section when they are playing out of tune. I can get back to Darius, who is playing his drum a little too loudly for a soft section in the music. In constant motion, I keep students on their toes and turn distraction into discipline.

What's Your Music Story?

Did you take piano lessons at a young age? Were you part of a garage band that played at local venues in your neighborhood? Maybe you were a member of your high school band or sang in the choir. It could be that you wish music had played a bigger role in your youth, and now you've enrolled your children in private music lessons so they won't miss out. Whatever the case may be, we all have a music story to tell.

What do you think Dan's music story will be? Maybe he will describe how he came to appreciate music as a core subject, one that he not only enjoyed, but also worked hard at. He might relate how he gained skills such as perseverance, dedication and commitment while learning how to play the trumpet. There's even a slight chance that Dan will recall having a band director who tried in earnest to share his passion for music with all.

A colleague of mine often forwards me the image of a 1958 Max Roach jazz album cover entitled "Deeds, Not Words." That phrase is true for my classroom. Just talking about being a great musician isn't worth anything. If one truly wants to succeed, he must work harder than he has ever worked in his life and respect music as an art form that demands discipline.

When I show my students what they're capable of as musicians, I'm also showing them they can do anything else they put their minds to when they devote attention to the details. Music develops the tools of thinking itself. A comprehensive study of music teaches students how to be patient and work toward excellence. It's proof that a group of like-minded people can accomplish feats that very few think possible. Even if some of my students do not go on to do anything with music after they graduate, there is no doubt that music has affected them in profound ways. After four years, they have all reaped the benefits of deep discipline.

KELLY ZUNKIEWIGZ

9th-12th GRADE PRECALCULUS AND AP CALCULUS

Earl J. Lennard High School Ruskin, FL

An Ohio native, Kelly Zunkiewicz teaches Precalculus and AP Calculus at Lennard High School in Hillsborough County, FL. Opened in 2006 to relieve overcrowding at a nearby school, Lennard serves more than 2,000 students, 75 percent of whom are eligible for free or reduced-price lunch. Kelly has taught at Lennard High since its second year and is now both a classroom teacher and math coach.

As the school has grown, so has Kelly's teaching practice. She is voracious in improving her own practice, visiting classrooms outside of her own area—like JROTC—in search of new ideas and strategies. In her own classroom, she uses student autobiographies, surveys and conversations to inform her every decision, which has helped to propel her students to make astounding gains. In her first year teaching AP Calculus, the exam pass rate was 11 percent, and over a five year period, she increased that rate to 80 percent. More recently, this year her students have already earned a 93 percent average on their winter benchmark exam, beating out every one of the other 26 schools in Hillsborough County, which average 73 percent. Perhaps one of Kelly's proudest accomplishments, however, has been increasing the number of female students taking her AP Calculus class from two to now more than half the students in the class.

"Great teachers are almost always careful planners for the content in their classrooms," says TNTP president Tim Daly. "That's true with Kelly, too. But more than any teacher we've seen, she also plans in advance for the students she'll soon be teaching. Her approach seems so simple that we found ourselves wondering why everyone doesn't do it. That's true of so many things in Kelly's teaching: She makes brilliance look easy."

Kelly's impressive results stem from her high expectations, the power of her planning and her ability to develop a deep understanding of her students. Along the way, she has earned impressive accolades, including being named Teacher of the Year for her school and Mathematics Teacher of the Year for Hillsborough County, and serving as a representative for the Measures of Effective Teaching Project for the Bill and Melinda Gates Foundation.



YOU HAD MY NUMBER

The smallest details you can learn about your students can have the most profound impact.

My school year begins the minute I get my class rosters. Clutching them like winning lottery tickets, I run to find our Algebra 2 teacher, who had my new Precalculus students last year. Notebook and pencil in hand, I sit with her in the teacher planning area and ask dozens of questions. I'm not asking who is well-behaved or who has an attitude—I want to know who my new students really are. I want details that can give me a useful perspective when they enter my classroom. Do I contact his grandma or his cousin for encouragement from home? Does she want to work at Disney World as Ariel before deciding on a more permanent career? Does she take care of five younger siblings after school while her single parent works two jobs? I need this intel to build the bonds that will help my students reach beyond their expectations—and achieve mine.

To adapt my teaching strategies to the students who walk in my door, I need to gain their respect and trust by learning who they are—and who they want to become. The work in this class will be challenging. They will look at an exponential function, explain the translations in relation to the parent function, then graph it and discuss why the function cannot have a negative output value. They will learn how to graph the first and second derivatives of a function and explain what their graphs mean in terms of velocity and acceleration. It's an entirely new language, and to help them master these rigorous topics and skills, I need insight into their thoughts and actions that will help me build deep relationships, provide an individualized learning experience and drive them to their maximum potential.

The details I need to build those relationships do not arrive on my desk in a manila folder at the beginning of the year. I am not required to learn this information, either. But investing in those relationships early and often allows me to reach all of my students, beginning with the information I have already learned before the start of the school year.

A Strategic Seating Chart

Building relationships early in the year helps me understand who my students are as individuals, and how to bring them together as a team. My conversation with their Algebra 2 teacher helps me start the year with a seating chart that is more than just a guessing game.

I start with a blank template of seven groups of four students. The natural leaders are placed first, one at each group, then the quiet or reserved students, and so on. The first day of school, I skip the icebreakers, post their groups on the board, and watch how my students react to a new situation without any direction from their teacher. Who are they automatically talking to? What kind of problem-solving skills do they have? Who emerges as a leader?

By the time the bell rings, I have already made mental notes about which students were helping others find their seats. I remember who sat down and chatted with a friend for several minutes before realizing there was a seating chart on the board (they have the "gift of gab," as my mother would say, and will be the first students I call on to explain their reasoning). All of these observations will help me pull each student out of his or her shell and push them all toward a deeper understanding of mathematics and themselves.

Within our teams, there is the expectation of collaboration and support. Having teammates that can anticipate their needs and support them with subtle positive phrases and high fives can make the difference between giving up or going forward. I tweak my seating chart often, but make it clear to students that changing seats is not a punishment; I'm just looking for balanced teams that can succeed together.

The smallest details you can learn about your students can have the most profound influence. This year, I learned early on that Dandy worked 30+ hours a week at Taco Bell, many times late into the night. He was more of an adult at 16 than I had been at 21. I knew that if our class was filled with worksheets or lectures, he would see it as a waste of his time and skip it. If he knew he was learning, Dandy would come to school.



POSTCARDS HOME

Even before the first day of school, I welcome my students to Precalculus or AP Calculus with a Lennard postcard sent to their home. The postcards are a simple way to communicate with my students and their families throughout the year. Most of my messages range from an introduction: "Welcome to Precalculus! I hope you are ready to work hard and have a great year!" to congratulations: "Fantastic job on your Unit 3 Test. You earned a 97 percent. Keep it up!" to encouragement: "I noticed you have been working really hard in class. You've raised your grade from a 72 percent to 75 percent this week. Let's get it to a B."

It takes just a little time to write these short messages, but they go a long way with students and parents. To this day, students like Doreida, from my first year of teaching, have kept all of their postcards.

By the end of the year, Dandy's strong relationship with his classmates and me inspired him to reduce his hours at work in the week prior to exams so he could attend tutoring sessions. If I had not looked beyond the sleepy teenager I met on the first day of school, I would never have seen how determined he would be to earn an A.

At the end of this year, Dandy gave me a big hug. "You had my number before I even walked in the door," he said. "I knew I couldn't mess around and this was serious."

Math Autobiographies

Gathering intel from the Algebra 2 teacher and my own observations is a great start, but I also want to hear straight from the source, which is why I assign the Math Autobiography on the first day of school. I stole this brilliant idea from my mentor while student teaching in college. He taught me that students need to have the freedom to reason and question to form an interest in the subject. This can only happen with trust and respect for the teacher, which I begin building with my seating chart and postcards—and build on with the Math Autobiography.

The Math Autobiography consists of seven inquiries:

- 1) What do you expect for this year? What are you looking forward to?
- 2) What do you want to accomplish in this class?
- 3) What are your short- and long-term goals for this school year and in Precalculus/AP Calculus?
- 4) Explain your daily routine after school (work, cooking, sports, homework, etc.).

- 5) Explain what the following words mean to you: pride, success, and teamwork.
- 6) What are your plans for after high school?
- 7) Please share anything you feel I should know about yourself.

I ask for at least one page of writing, but I am considering a page limit because students who are essentially strangers will detail their lives in five pages and still want to write more. This assignment conditions my students to expect writing in my class—and it also gives me insight into their lives that I would never gather from normal conversation. One of the most essential things that I've learned is that, next to family, respect is the most important aspect of many of the cultures at Lennard High School. Learning as much as I can about my students is how I earn that respect.

Most students roll their eyes when I tell them I will read all of the autobiographies, but most students also roll their eyes when I tell them I will know their names by the third day of school. Fulfilling those promises helps me become a new fixture in their lives. When I exceed their expectations, they learn little by little that they want to exceed mine.

Throughout that first week, I sit down at my dining room table with my stack of autobiographies, a pen and a highlighter and dive in, reading for details I can file away to be used later. In my detailed comments, I share facts about my own life. When a student expressed that he had to drive his terminally ill mother to medical appointments even though he was not yet 16, I shared that my father was in the hospital when I was in high school as well. These issues can be difficult to talk about,

but making this connection the first week of school allows me to understand his body language. The dark circles under his eyes were not from playing too many videogames or watching Netflix, but from staying up night after night with his mother.

More Questions Than Answers

The purpose of building your relationship with students is to allow you to go further with the curriculum and raise expectations higher than the students have ever experienced. In my class, that means receiving more questions than answers. There will be a lot of frustration and struggle, but no cowering at the sign of defeat, only the strength and confidence to work harder.

Earlier in my career, I decided to make "why" the most important part of conversations with my students. Too often, students make it through an entire day of school without being asked, "Why do you believe that? Why did you use that step here? Why did you stop?"

As teachers, we have been trained to answer our students' questions—by giving away answers. Our students have been conditioned to wait for our answers, knowing that if they wait, we will eventually tell them what to do or how to proceed.

That kind of relationship stifles our students' ability to think. Telling students what to do is like putting a Band-Aid on a wound, but we need to clean it and put Neosporin on it first. Students can learn so much more from our refusal to immediately answer their questions, but it requires a relationship of trust and respect that I have been working to develop since the first day of school.

I find myself asking why whenever students answer a question or think of a new idea. When Alex and Yovan had two different answers for the condensed form of a logarithm, they called me over to settle their dispute.

"Ms. Zunkiewicz," Alex said, "we are working on number eight. I have this answer, but Yovan has this."

There really was no question. I was brought over to announce the winner. They were actually both correct, but they did not know that yet. So I asked both students, "Why do you think you are correct?"

I could see Alex and Yovan frantically questioning, "Am I right, or is he?" Both were strong students, and neither wanted to be wrong. They jumped into conversation, trying to prove to me and their team why they were each correct. Asking why started that crucial discussion and reasoning, which led to the realization that both answers were correct, but had used different paths in simplifying.

WORDS OF **ENLIGHTENMENT**

Students are always surprised to discover that the insightful sentences I've highlighted in their Math Autobiographies will become a permanent presence in our classroom. The highlighted sentences are their "words of enlightenment," to be revered by all students, parents and adults who walk through our doorway. They are posted on neon sentence strips and line the walls of the corridor outside my classroom and a large part of the wall space directly inside my door. Motivating and insightful thoughts from students past and present are there for us to draw strength from, and they will remain for years to come.

After realizing why I have highlighted their papers, students are ready to join the tradition and pick up neon sentence strips and markers from the supply table. They meticulously copy down their highlighted thoughts and sign their names into Lennard history.

Parents, teachers, and other adults gravitate to these inspirational quotes when they enter our classroom. Many are amazed and some question the authenticity of the quotes, asking, "Did you tell them what to write?" I am always surprised at this because each student has something different to say. We just need to listen.

"This year I expect greatness. Not so much from happenings of circumstance, but rather from myself. This year I will take on new challenges, face new obstacles, and push myself further than I have in the past. This year is all about reaching new heights."

- Rebecca

"This year I will constantly strive for the best, not only for myself, but for my classmates."

- Ahnyiah

"Success doesn't happen overnight. It's gained over an amount of hard work and dedication, don't quit as soon as it gets hard. It's not about how many times you get knocked down, it's about how many times you GET BACK UP!"

- Robert

CUE CARDS

I remember standing in a long line at Subway, waiting to place my order, and watching a new employee struggle behind the counter. He was unsure of what to say and ask, similar to new teachers in the classroom. He kept looking at something behind the glass window. I was curious, so I peeked around the corner and saw small cue cards labelled with white, wheat, flatbread, all the types of bread, cheese and toppings for each sub. Genius! I was so excited I almost rushed out without placing my order. I now had a plan on how to implement the strategy of asking why.

For months afterward, I put sticky notes, just like these cue cards, all over my classroom. There was one on my document camera, on the projector, on my table to the right of my Smartboard. I even had a poster-sized one at the back of the room that I could see from anywhere. Those cue cards continually reminded me to ask why—and also prompted my students to join in and ask each other why, too.

Asking why helps students reach higher-order thinking, pushing them to think deeper and more conceptually to reason their thought process out in words. This is a great start for questioning, but how are you going to respond to questions and statements like, "Did I do this right?" or "I don't know what to do. I'm stuck..."?

I knew that I was using a lot of questions to push my students, but I honestly had a hard time pinpointing exactly what those questions were. Writing this essay, I was sitting in the library, surrounded by its deafening silence and a blank computer screen, trying to explain my process. A typical Florida thunderstorm rolled through, and I was hoping each lightning strike would bring on an epiphany. Feeling as frustrated as my students often do, I watched my teaching videos saved on my computer, trying to answer the questions, "What was I doing to engage my students?" and "How was I getting them to talk?"

As I filled up pages of notes from these videos, I realized that I began with a powerful starter question every time a student called me to their table. Whether students were asking me about functions, acceleration, asymptotes, or logarithmic properties, I consistently asked the same questions as an entryway to the ideas they needed to discover.

The questions I use most often are:

What does that mean?

What do you think you need to do?

What does your team think?

How did you get that?

What did you do first?

What do you mean?

What happened here?

Can you explain this part to me?

Is there another way to say that or write that?

These questions are not groundbreaking or filled with higherorder thinking stems, but they get my students engaged, talking and explaining what they did and what they meant out loud. You will find students having their "aha" moment midsentence. While discussing the sine function with one of my teams, Vanessa almost jumped out of her chair with excitement to share with her classmates. I actually took a step back from the group so that she could have the floor to guide her team.

I want to warn you that these questions may have an initial side effect of student frustration. One day, I heard, "I just don't get it!" from across the classroom and turned to see Skye pound his fist on his desk. One of his partners was shaking his head after explaining the difference between one- and two-sided limits for a second time. Angi jumped in, trying to help by drawing an example on her whiteboard. It was a team effort and a crucial moment for Skye.

From a distance, I began to see Skye spiraling downwards. His teammates had the best intentions, but it was time for me to step in. "What's going on, Skye?"

"This doesn't make any sense!"

Skye was about to reach his breaking point, so I pulled up a chair so I could be on his level, face to face. "Is it the onesided limits or the two-sided limits that are throwing you for a loop?" I continued with my questions to get at the source of his confusion.

We both knew he wanted to take AP Calculus the following year, but he needed to prove he would work harder and believe in himself more. Skye pointed at Anqi's example and said, "This is where I am stuck." Earlier in the year Skye would have stopped here and waited for me to ask why, but he continued on his own. "I don't understand why this limit can equal two when the y-value at that point is actually six."



Asking questions as an entryway to the ideas students need to discover.

Together we discovered why the two-sided limit could equal two and that two-sided limits did not require continuity. Pushing through that frustration was only possible because of the relationship we had built from the beginning of the year. He trusted me to walk him through this process and was no longer looking for me to give him the answer.

If you build strong relationships with your students now, you can lean on them to push harder for success later. Learning is tough. Strong relationships allow you to be real about that struggle, ultimately empowering students with strength that will stay with them their entire lives.

Lifelong Resilience

The state of Florida may have rated Lennard High School as an "F" eight years ago, but we are changing that every day by building traditions, raising expectations and strengthening the bonds that have been built since I received my rosters. I have created an environment for students to transform into thoughtful, resilient adult learners who are ready to tackle the world where the pace is ten times the speed of our snow birds' golf carts.

My students may currently live in trailers, work in the fields and help support their families, but their lives going forward can be whatever they dream. I want my students to say this was the hardest class they have ever taken, but it was also the most successful they have ever been. Over time, they develop a pride in themselves, their class and their school.

These students are prepared to attend college, start a career or enter the military with the full understanding that life is not easy, but they are ready. Garrett and Emily have secured scholarships to attend four-year universities to become a financial planner and a veterinarian, respectively. Evan and Manny have enlisted in the military to defend our country. Cruz is working at a fish farm with the goal of becoming the manager—and one day the owner. They can do it all because they have battled with frustration and come out as stronger, happier, smarter individuals. Preparing them to achieve those goals takes a lot of hard work, but it all begins with respecting who they are—and who they want to be.

LAURA STRAIT

4th GRADE ELEMENTARY
Aspire ERES Academy
Oakland, CA

Though she trained to be a teacher at Providence College in Rhode Island and began teaching in Massachusetts in 2007, when Laura Strait heard her assistant principal was moving to California to become the principal of ERES Academy, part of the Aspire Schools network, she picked up her roots and followed. "I knew I had to go with her if I wanted to be a great teacher," she said.

As her school's lead teacher for third through fifth grades, Laura's hallmark is her determination to keep improving no matter how far she's already come. "My passion is in the classroom. I want to continue to set two or three goals each year and hit those every year for five, ten, fifteen years." She is also a mentor teacher for the Aspire Teacher Residency Program and constantly helps other teachers learn and grow.

Undoubtedly, this drive has fueled Laura's phenomenal classroom results. At a school where 94 percent of the students qualify for free or reduced-price lunch, 88 percent of her fourth-grade students and 81 percent of her fifth-grade students scored either Advanced or Proficient in math. Over the course of two years, an overwhelming majority grew between two and five reading levels.

"Laura is the teacher we all want to be: wholly dedicated to her craft and able to surmount any obstacle she encounters in her classroom," says TNTP president Tim Daly. "Her students not only attempt work that many would see as too difficult for them, but they master that work. Her belief in them becomes belief in themselves."

Laura has mastered the skill of differentiating instruction and meeting individual students' needs. Through meticulous planning, data analysis and blended learning, she gives every student the support they need to take control of their learning and grow with confidence. "All students deserve a teacher who will never give up on them and will do whatever it takes to ensure their success," says her principal. "That is Laura, and that is why she deserves the Fishman Prize. She changes lives."



ROOM FOR DEBATE

The opportunity to practice in a comfortable environment is the single greatest gift you can give to second language learners.

Ricardo straightens his tie, combs his hair a little to the right and reviews the notes on his color-coded index cards. His team has diligently gathered textual evidence to support their opinions about which World War II attack was worse: Hiroshima or Pearl Harbor. As the speaking captain of his team, he brings his group into a huddle as the Jeopardy theme song plays quietly in the background.

"We've come so far since the first reading about Pearl Harbor," Ricardo says, "and now it's time to show the other side how much we know." His mother sits among the other family members in the audience, beaming as her son kicks off the heated debate.

Ricardo is nine years old. Just six months ago, he lacked confidence speaking English.

For Ricardo and the 23 other English Language Learners in my fourth-grade class, this debate is the capstone event of a threemonth unit that lets my students take ownership of their new language as they engage with rigorous academic content. To achieve this level of discourse, they need to practice vocabulary and language skills daily while developing background knowledge in history, geography and culture. Just as importantly, they need to build trust among their classmates and teachers to become fearless risk-takers on the path to college.

I teach in Oakland, California, where 97 percent of my school population is Latino. Most students come to ERES Academy needing intense vocabulary instruction to succeed in academic and social settings. Students often enter Kindergarten at ERES fearful of speaking English, and by the time they reach my fourth-grade classroom, many have never shaken that anxiety. Nonetheless, at all grade levels, college readiness is the expectation, not the exception. That's why I strive to create a positive, comfortable environment for students to take risks with speaking, listening, reading and writing. In this safe space, students' language skills thrive, their confidence soars and their critical thinking skyrockets.

Yet as well-choreographed as this debate appears on the big day, the event was not originally embedded in the master unit plan. This year, our school was experimenting with new Language Arts standards, trying different ways to incorporate reading across subject areas. We had flexibility with implementing ideas from the Common Core standards. When an art teacher offered to collaborate by connecting an origami project to a book on Japan, my one-week lesson plan blossomed into a three-month, student-led journey through history, sparking my students' imagination, curiosity and English language skills.

"Hey, Ms. Strait?" Ricardo asked during one key lesson in the unit. "What if we had a debate? Our class' opinions are split down the middle."

An engaging activity that ties together language skills and higher-order content knowledge? A unit assessment that requires students to read closely and translate analysis into logical arguments? How could I say no?

The Gift of Practice

The opportunity to practice in a comfortable environment is the single greatest gift you can give to second language learners. Before diving into academic content, it's better to have students speak and listen to each other in an informal, social setting. Our morning meeting circle is an essential time for students to practice their language skills and take risks with their classmates.

At 8:30 a.m., students walk quietly to their rug spots. I start with various prompts that students share with their assigned partners. "If you could have one superpower in the world, what would it be?" I give twenty seconds of think time until I see 100 percent of students with their thumbs up. Students then "turn and talk," a conversational support strategy that allows them to formulate and listen to each other's ideas in a low-risk setting.

"It will be traveling time because I want to see dinosaurs," Ricardo says.

Julia continues: "I want to read brains because I want to learn what people think."

Their vocabulary and syntax are still developing, but day by day, these conversations grow richer. One way I support them is through sentence starters, a tactic to further develop their

SENTENCE STARTERS

English Language Learners need to speak fluently and sentence starters are a simple language strategy that can be incorporated into daily activities. We focus on two sentence starter categories a week until students feel comfortable with each phrase. As the year progresses, students become more familiar with the sentence starters and have a permanent bank to work with. They use their sentence frames first during social conversations: "In other words are you saying...," "Would you mind repeating that a little slower?" Once students grow more comfortable in this setting, they start using them during our reading and math discussions.

Expressing an Opinion:

It seems to me that... Not everyone will agree with me, but...

Paraphrasing:

Let me see if I got this right, you are saying... If I understand you correctly, you think...

Asking for Clarification:

Would you mind explaining that in another way? I have a question about...

Politely Disagreeing:

I don't quite agree with your point about... I have another way of looking at this...

Offering a Suggestion:

Here is something you might try... Maybe you could...

Interrupting:

I'm sorry for interrupting, but... Excuse me. but...

Complimenting:

Now I understand better because... I like the way you...

Sentence starters give students a sense of empowerment and are another important tool they use to master a second language.



Practicing in a comfortable environment.

lexicons. The difference is immediate when they use these helpful phrases with the prompt "What would you do if you won a million dollars?"

They take out their sentence starters. Ricardo begins, "I think if I won a million dollars, I would buy an airplane."

Julia uses her sentence starters to ask some clarifying questions. "Can you say more about that? I'm curious if you would buy anything else?"

Ricardo explains further. "I want to buy an airplane so our class can take field trips to anywhere in the world. It's kind of like the Magic School Bus, but it's a plane instead. I also want to buy lots of houses all over the world so we have places to stay."

Julia uses a starter to help paraphrase Ricardo's thoughts. "Let me see if I got this right. You are saying..."

Students are having more respectful conversations and are allowing each other to make mistakes. Their comfort level is increasing within this culture of trust. Even though my students won't be arguing about superpowers during our reading lessons, they need these foundational discussion skills to begin grappling with the complexities of World War II.

Anchors for Understanding

Understanding an anchor text is the goal for most Common Core-aligned reading lessons. An anchor text acts as the cornerstone of various sources, allowing students to uncover layers of meaning that lead to deep comprehension.

To feel comfortable with the rigorous content of the anchor text, students need to acquire background knowledge and build vocabulary skills. For this unit, students aspire to comprehend Sadako and the Thousand Paper Cranes, a nonfiction story about a Japanese girl who was affected by the atomic bomb.

To conquer this challenging text, they need background information on Hiroshima and Pearl Harbor. During the first week, we read the story Attack on Pearl Harbor by Shelley Tanaka. The class gains knowledge about civilian and military lives that were destroyed on that infamous day.

The following week, we read the book *Hiroshima* by Laurence Yep. Students view the bombings of Hiroshima through the eyes of a 12-year-old girl. These two books start our text collection. Over the next month, our class compiles sources to help comprehend our anchor text.

Planning and executing vocabulary lessons is imperative for reading comprehension. Before presenting a text to the class, I scan for challenging words. In Hiroshima I anticipate that the words "civilian," "atomic," "radiation" and "headquarters" will be tricky for my students. I teach these vocabulary words in small groups before reading the full text with the class. When we read aloud, students use their right hands to cup their ears to signal that they are "tuning into the word," a small gesture that increases reading engagement and allows me to gauge student understanding.

It's even more powerful when students discover these definitions themselves, using context clues or hints to help define words. I encourage each group to practice these words using verbal and visual representations. Analyzing the sentence, "After the explosion, the highest ranking officers went to lend a hand to the civilians on the ground," Jose and Ricardo start discussing the possible meanings of the word "civilian."

Jose starts. "It seems to me, 'civilian' means officer because these two words are in the sentence together."

I turn to Ricardo. "What do you think?"

Ricardo politely disagrees. "My idea is slightly different. I think 'civilian' means everyday person because the officer helps the civilian off the ground. It don't mean officer."

"Thank you for explaining your thoughts. I understand it better," Jose says. I commend Jose and Ricardo for making incremental language gains.

Other students are pushing their understanding beyond context clues. Ana shares the word by showing a picture she drew of a community member in the midst of a riot and explains, "A civilian is not a member of the armed forces, but an ordinary citizen just like us." Ana receives a "college award" for demonstrating brilliant thinking. Best of all, she will later use this word astutely in our debate.

Hunting for Multiple Perspectives

After two months of social conversations and purposeful practice, students' language skills have grown significantly and that improvement is reflected in their reading and critical thought. Since the Common Core requires students to do comparative thinking, I have them start analyzing one text and gradually search for more sources. As their text collection expands, students take a stance for one of the sides. When students grapple with multiple perspectives, they feel empowered to think critically and formulate strong opinions in their second language.

Discovering sources to defend an opinion is what ignited Ricardo's idea for the debate. Teams naturally start to form over the next couple of days.

"Hey Carmen," Thomas says. "Your thinking is similar to mine about the effects on civilians. I think you should be on Team Pearl Harbor."

By now sentence starters have worked their way into everyday conversation.

"Oh yeah, you're right! We both believe the explosions had awful effects on Peter's family," replies Carmen. As students start to divide, I suggest they assign each other roles within their teams: group facilitator, speaking captain, listening leader and the watchful eye who secretly monitors the other team's defensive arguments. These leadership roles help students stay focused and on task with their missions.

After combing the internet for two articles from differing views, Ricardo is extremely honored to share them with the class, sparking an intense discussion.

"Wow! I never knew that reading articles could be so interesting. I have some strong opinions, Gerardo. Your team better watch out!"

"Well, you have no idea what we have in store for you guys!" Gerardo replies.

When students come across multiple texts, they don't necessarily know how to compare and contrast perspectives. Often teachers give students Venn diagrams to use, but I prefer a different tool: the top hat organizer. Much like sentence starters, top hat organizers help students build confidence with their language. Students first fill out an essential question, followed by a description chart for both topics. The top hat organizer allows space for students to record key similarities and differences and consolidate ideas. They use this information to compare and contrast ideas, draw conclusions and synthesize their learning. To make this process extremely clear, our class needs to develop criteria for the description chart.

A BRIDGE BETWEEN HOME AND SCHOOL

Establishing a positive culture is important for student success and self-esteem. Students have several opportunities throughout the day to earn positive phone calls home, effort stars, class points or college awards for "most improved," "best effort," "most responsible," or "best teamwork."

Establishing these rewards has helped improve communication with families. When I first started at ERES Academy, it was very difficult to converse with families because I do not speak fluent Spanish. However, once the students started telling their parents the amazing work they were doing, they would trickle into my room after school, thanking me for supporting their children. These positive phone calls are a bridge between the students' lives at home and school. The calls also ignited more parent interest in the classroom. Families come into the classroom to read with students and listen to group discussions.

I also give out five college awards daily to students who delve deep into content and portray a growth mindset. Students make a loud drumroll on their desks as the college awards are announced one by one. The college award includes a certificate and a school supply they will need for college: writing utensils, notebooks, erasers, markers and so forth. To say students are excited to receive these awards is an understatement. As they reach into the prize basket, they know nothing can stop them from pursuing their college dreams.

I collect key information in the description organizer using four criteria, created by explaining common topics that resonate throughout the text. I gradually release this responsibility, and students formulate the criteria on their own: technology and equipment used, effects on civilians and soldiers, amount of destruction and emotional civilian stories. This gives a central focus for comparing and contrasting ideas across many sources. Crucially, it also gives them ownership over their new vocabulary and ideas. These criteria will eventually be written on student notecards as the four separate topics for the debate.

It's time to dive deeper into the texts. Searching for evidence is a challenging task, so I meticulously model how to find examples. I select and analyze quotes from only three sentences at a time, reminding students not to be overwhelmed with a full page of material. After this demonstration, students are able to regain ownership over this process.

However, not all students require this mini-lesson.

Back at their seats, Gerardo and Ashley are already making insightful connections in their journals. As Gerardo connects the Pearl Harbor attack to the Boston Marathon bombing, Ashley writes, "The attacks on Hiroshima reminded me of the book A Series of Unfortunate Events because radiation is like the villain, Count Olaf. Radiation is the villain of the atomic bomb." Whether students require extra modeling or are independently making connections, these steps meet students' needs and emphasize college readiness.

As the teams reunite, I announce that the "most cooperative" group will receive positive phone calls home. Students immediately start digging for specific evidence to defend their arguments. To heighten student engagement, each scholar picks out their favorite colored magnifying glass. They are no longer just readers in my classroom: They are now detectives!

Ashley, the group facilitator, efficiently gathers her team on the rug. "Okay, we got this. I think we should divide the topics among the twelve of us." She delegates her team into four subgroups. Each group now has an assigned topic and they start spreading out the various sources. They are hard at work, scanning their magnifying glasses across the texts.

"I think I just spotted some evidence that supports the destruction topic," Javier whispers to his teammates.

"Nice work Javi! Now, let's write that down in our journals," Cassidy replies enthusiastically.

After the hunt is over, students walk to their seats and rapidly add evidence to their notecards. Students barricade their desks with folders and binders, making sure no lingering eyes are stealing ideas.

Building Language Through Rubrics

Many teachers develop rubrics to maintain high expectations, but I see this as another opportunity to build on language skills. It's especially crucial for English Language Learners to understand the nuanced language of the rubric and the distinct differences between a level 1, 2, 3 and 4, reinforcing their prior lessons on vocabulary and close reading. Designing the rubric raises engagement, ownership and empowerment to a new level. Students are not only an integral part of the learning process, but they can also articulate how they will be assessed.



On debate day, the classroom is transformed into an assembly hall.

To help these learners summarize the rubric, students do a Think, Pair, Share about the different indicators. I listen to Manuel explaining to Jocelyn how to receive a 4 in the debate. "I think in order to get a 4, we need to use at least five pieces of text evidence, five sentence starters, and ask questions that make the other team think a little harder."

Jocelyn paraphrases and compliments Manuel's thoughts. "It seems to me that the major difference between the two scores is that in level 4, we need to come up with questions that will change the way the other team is thinking." Students are realizing they have the tools and power to change each other's thought processes. The students are taking ownership over their learning. After nearly three months, I am just the facilitator.

Once students understand the language of the rubric, we enter the final days of the unit. Mini debate groups form as a final opportunity to help students develop comfort and trust among each other. Each group consists of three students from both sides and three audience members that will grade them. As I circulate and take observation notes, the groups simultaneously practice in separate corners of the classroom.

The Final Debate

The final debate is a very emotional day that symbolizes the determination, hard work and intelligence that each student has demonstrated in the weeks leading up to this moment. Students, who normally wear their gray and navy blue uniforms to school, come professionally dressed for this special occasion.

When they enter the classroom, they don't feel like ordinary students. They are proud scholars who see themselves on the pathway to college. Each student happily takes responsibility to transform the classroom into an assembly hall that depicts a sense of seriousness, purposefulness and professionalism.

Carmen, Manuel and Nadia are setting up rows of chairs for their families. Maria, Anthony and Ricardo decorate their side of the room with encouraging posters. Javier and Ashley set up light refreshments for the celebration after the debate. The rest of the students are eagerly reviewing their notecards and practicing their sentence starters.

Acquiring these debate skills enables students to gain more confidence in their second language. They are motivated to present in front of their classmates and families. There is a new sense of pride that wasn't fully there at the beginning of the year. Leaving fourth grade, they feel empowered to listen, speak, read and write in English. The fear of speaking another language no longer intimidates them.

I'm standing with Miguel and Cassidy at the door, welcoming parents and siblings into the classroom. Jose's dad immediately starts setting up his video camera so he can record his son in action. Jocelyn's mom is juggling her three younger children on her lap. Our "guest judges," the principal and afterschool director, arrive and organize their rubrics and grading materials. The air is buzzing as scholars and families settle into their seat assignments. The intense World War II debate is about to begin.

MICHAEL TOWNE

10th-12th GRADE PHYSICS AND ENGINEERING

Citrus Hill High School Perris, CA

For Michael Towne, who served in the U.S. Marine Corps and worked as a small business owner selling shoes before becoming a teacher in 2001, bringing physics to Citrus Hill High School has always been about more than the content. "My vision was physics as an agent for social change," he says.

When Mike first arrived at Citrus Hill, a 1,700-student school about an hour east of Los Angeles, only 41 students were enrolled in physics and none in engineering. He responded by developing a new physics and engineering program from scratch, increasing enrollment to more than 350 students in eight years while maintaining the highest standardized test scores for any subject in the district. Last year, an astonishing 26 percent of the Mexican-American students who passed the AP Physics Electricity & Magnetism exam in the entire state of California came from his classroom.

After 12 years teaching, Mike has learned his class inside and out.

"There is only one Mike Towne," says TNTP president Tim Daly. "He is an ambassador for the joy and usefulness of learning physics, and truly peerless in his track record of supporting students to master it. We marvel at his passion. For anyone who shied away from physics in their own education, he'll have you wishing you could go back and do it all over—with him as your teacher."

It's also clear how much Mike cares about his students' development. He brings back former students, many of whom are now in University of California programs, to tutor his current students after school.

Mike has been asked to address both houses of the United States Congress on behalf of the College Board, and in 2013, he also spoke before Congress to advocate for increased access to AP Physics. Currently, he is pursuing a Ph.D. in Education, Society and Culture from the University of California, Riverside, specifically focusing on access and equity for ethnic minority students in science. Even with these accomplishments, Mike jokes that he's only the second best teacher in his family. He credits his wife, a teacher for more than 20 years, with motivating his own move into teaching.



USE YOUR VOICES

I encourage my students to embrace their inner 10-year-olds because they question the universe in a uniquely uninhibited way.

Most people would rather volunteer for an amateur root canal than take physics. There is a myth in our society that physics is only for science whizzes, which is why so many students avoid this "hard" class. In truth, students with strong physics preparation are more likely to graduate from college, get accepted to competitive programs like medical school, and eventually land highly paid jobs in fields like engineering. With that in mind, you'd think schools would encourage as many students as possible to take physics, but in schools across the country, that's simply not happening. In California, for example, nearly half of our students are Hispanic, yet they represent less than 5 percent of those who pass the AP Physics exam.

Those results are even more troubling when you consider that students from my classroom recently accounted for 26 percent of those who passed statewide. At a glance, that number suggests something extraordinary about my students—and they do have a lot to be proud of—but the real story is that Hispanic students are largely excluded from quality physics programs.

What happens in my classroom is proof that students from any background, given the appropriate supports, can gain deep conceptual understandings of physics, opening the doors to life opportunities usually reserved for the elite. That's how physics can act as an agent of social change in our community.

That change starts, paradoxically, by encouraging my students to speak like 10-year-olds.

Three Voices Are Better Than One

One of my most important classroom strategies is encouraging my students to grapple with physics concepts in three different voices: a smart 10-year-old, a high school physics student and a physics professor. These voices allow students to engage with the material at different levels, bridging their everyday vernacular with the "official physics" language of a professor.

The 10-year-old voice offers students the chance to focus on the basic concepts and ask questions or make comments with a childlike curiosity, unfettered by the fear of being wrong. The high school student voice is their developing vernacular. The professor's voice is the canonical level of understanding, which, if mastered, increases their chances of future success in a college physics class.

One subject. Three voices. That's how I teach my students to "speak physics."

The Uninhibited 10-Year-Old's Voice

Today in my third period physics classroom, Alejandro, Maribel and Elias huddle in conversations at their respective tables. For two minutes, groups have been discussing how to determine the acceleration of a charged particle in the region described by the potential field equation I wrote on the board.

I overhear Alejandro say, "I think the thing will go to the right?"

His answer is vague, but partially correct. I ask, "What do you mean go to the right? How would you explain your idea to your 10-year-old cousin?"

I encourage my students to embrace their inner 10-yearolds because children question the universe in a uniquely uninhibited way. Students are easily intimidated by academic language and more likely to participate if empowered to choose less threatening options like this childlike voice of inquisitive wonder. Learning complex material generates multitudes of questions; some are simple, others complex.

While Alejandro answers, I move to the next group to keep my presence from altering his response, but I'm eavesdropping as he shares. Based on their discussion, I plan my first questions for the whole group. I continue, stopping in each group long enough get a gist of the conversation and prod the speaker with a question or comment.

As conversations diminish, I say, "Come together and discuss the motion of this particle." Students swivel towards me.

The high school voice is their "normal" voice, which is constantly developing through discourse and experience.

After a few seconds, Elias, sitting in a group across the room from Alejandro, offers, "I think the particle will go to the right."

I ask Alejandro to comment on what Elias just said, placing the two students in dialogue with each other as opposed to with me, the teacher.

"I agree," Alejandro says.

After a few seconds, I encourage him by asking one of his partners a question. "What do you think a 10-year-old might ask Alejandro?"

"How did he know that?" she says slowly, channeling her inner 10-year-old. "He told me a charged particle is like a ball rolling down a hill. Balls roll down real hills, but charges roll down electric hills. So you have to know which way the electric hill goes, I mean slopes...I guess that's why we get the derivative."

This student might have been less likely to join the discussion if the academic register or voice of a physics professor had been her only option. Her conceptual understanding is strong, but I want to build on this strength.

I describe these conversations to my students as "mental weightlifting." Going to the gym regularly to lift weights changes the body, and coming to class regularly to discuss complex ideas will change the brain. To benefit from either, you can't just watch—you have to dig in. In my classroom, students gain access to complex ideas through strategies encouraging them to participate more meaningfully in complex physics discussions that would intimidate many highly educated adults.

The Developing High School Student's Voice

Alejandro clarifies for his partner, elevating the conversation from the 10-year-old voice to the high school vernacular. "Take the derivative of the potential function to get the force," he says. "I mean the x-derivative, not the t-derivative, because that would be velocity, I think." Here, he uses his developing academic register, deepening his understanding. Slowly but surely, he's learning how to "speak physics."

The high school voice is my students' "normal" voice, which is constantly developing through discourse and experience. This voice is the bridge between the childlike voice and official register of the professor. I train students to revert to their inner 10-year-old when they struggle with concepts or vocabulary,

but their high school vernacular is their "normal voice," which evolves over time to more closely approximate a professor. Listening to them during group discussions is like watching a soccer team run practice plays; each repetition is a chance to refine their performance.

The Physics Professor's Voice

To help my students achieve mastery, I often supply the canonical language as they develop the official register of physics. It's more than just elevating vocabulary; it's also internalizing the precise, technical language of physics that is evidence of deep conceptual understanding. The professor's voice uses official physics terminology, but more importantly demonstrates the way experts understand the concepts. As students grapple with abstract ideas, they strive to reach this canonical level of discourse.

"The x-derivative is called the spatial derivative," I say, "or the potential gradient. Gradient means change or slope, like a ball on a hill is on a spatial gradient." During this discussion, Alejandro's partner explained concepts using the 10-yearold register, while Alejandro transitioned to the developing vernacular register of a high school student. When I supply the canonical register, Alejandro adopts the professor's voice.

"Yeah, that's what I mean," Alejandro continues. "The spatial derivative of the potential—you know, the U(x)—is the force. I mean the negative of the force. Don't forget the negative."

Scaffolding students' use of three voices facilitates their progression. Alejandro's transition from vernacular to more canonical terminology is a critical turning point in our discussion, signaling the change in cognition as students develop precise technical language to describe complex ideas. The progression of student discourse, however, is neither uniform nor linear. It progresses at different rates depending on the student.

Building Support for Productive Discussion

Listening to groups discuss these ideas helps me realize that not all students have made the leap to the professor's voice, like Alejandro has. I decide to address these varying levels of understanding during the whole-group discussion. As Alejandro's explanation winds down, I turn to Maribel and ask her, "What do you think about what he said?"

"I agree," she says, followed by silence. But her baffled look exposes her confusion. Like the majority of the class, she needs more time.

I ask her, "How could you rephrase what Alejandro and Elias just explained in a way that a bright 10-year-old could understand?" Maribel looks at me for several seconds and says, "I need 30 seconds to discuss that with my group."

She has learned that this response is completely acceptable. I reply to the class, "Everyone, discuss with your group how you might rephrase the explanation for a 10-year-old."

Maribel called a strategic timeout to seek support from her group. In a classroom like mine, with students of diverse abilities, some struggle to keep up. I offer them the option to request a brief timeout to refocus their thinking in a structured, low-stakes discussion with their group.

The class again erupts into separate discussions. I circulate, getting a sense of the level of shared confusion. I make important decisions as I gauge their understanding based on what I hear. Too much confusion will lead me to reteach a concept in a mini-lesson. At times, most students have a strong conceptual understanding, allowing me to meet with just a few struggling students.

When considering equitable access to physics for my students, I know they need tools to join the conversation. I can lecture all period, but until they actively engage with the material, they won't truly learn. Physics, I tell them, is not a spectator sport. Students construct understanding through strategic actions: questioning, rephrasing, correcting misconceptions, interpreting equations and data, solving problems, as well as listening critically to each other. Complex ideas come to life for them through hundreds of interactions.

I listen briefly to Elias explaining the direction of the force on this object and say, "You've got it mostly right, but just because the force is pointing to the right, that doesn't mean the object is moving to the right." All three students in Elias' group gape at me, which is my clue that I need to use a different voice.

Mixing the Three Voices

"Okay," I continue, "think about a truck driver on the northbound freeway slamming on her brakes. The net force is south because her brakes are pulling back on the truck, but the truck continues to go north for a while. You would call that a skid. The braking force is in the opposite direction of the skidding motion."

My description combines vernacular terms like "skidding motion" with canonical terms like "net force." I scaffold confused students while modeling how to think about complicated ideas in two voices. For the strategy to work, students need to reconcile two world views: their everyday lived experience with the formalized representations of physics.

When we reconvene as a whole class, Maribel begins her 10-year-old explanation: "It's like a ball rolling down a hill.

STRATEGIC TIMEOUT

A crucial discussion tool while using the three voices is the strategic timeout. Faced with a demanding cognitive task, like synthesizing a difficult concept, an overwhelmed student may freeze. To avoid having them shut down and withdraw from the conversation, I train them to strategically request time to gather their thoughts with group support. This increases agency and decreases anxiety. The fear of appearing stupid is a major impediment to productive discussions. Reflective pauses help overcome fear.

During the pause, they have several options: formulate an answer, ask a clarifying question or restate what has been said. For example, Maribel could choose to ask an orienting question: "I'm really not sure what gradient means?" Although Maribel requested the timeout, every group discussed the question, giving them all a chance to refocus while I gauge class understanding and misconceptions by listening. Once students embrace this strategy, it empowers them to engage deeply even when they feel slightly overwhelmed.

For an electric charge, the hill is an electric hill. It's an imaginary hill, but it's real for the charge." Several other students add details, ask questions and suggest modifications. After two minutes of discussion, they reach a consensus of what a 10-year-old would understand.

I ask Elias to give his perspective about the direction of the force compared to the direction of travel. He starts to answer, but hesitates. His partner shares the example of the truck braking on the freeway.

She explains, "Sometimes the force is not in the same direction the truck is going. Like for example, if a truck is going on a road and then slams on the brakes, the force goes backwards while the truck keeps going forward until it stops."

Mixed-voice descriptions like this help students build understandings of counterintuitive notions. Their common sense knowledge helps construct technical understanding. As they work together to consolidate seemingly disparate world views, they are learning to speak and think like a physics professor.



A powerfully flexible strategy for grouping students.

Flexible Triads

Once Maribel concludes, I place students purposefully in groups of three using a strategy I call Flexible Triads. Here's how it works: Students pick cards before class, assigning them to a numbered group, each with an A, B and C person. Each card has four corners and a center, which gives me the flexibility to choose any one of five grouping options. I create these cards ahead of time to give myself the option of choosing heterogeneous, homogeneous or random groups, depending on my goals for the lesson.

For example, I may ask students to get into groups according to the upper left corner of their cards. Alternatively, I may ask them to group according to the number in the lower right corner of their cards. A student might be in group 5 according to the upper left corner of her card, but she will be in group 11 according to the lower right corner. I use different corners for different purposes. Upper left corner groups form homogeneous groups, whereas lower right corners form heterogeneous groups. Center groups are random. It is a powerfully flexible strategy for efficient grouping, allowing me to change students groups quickly within a class period and assign tasks to individuals within a group.

Memorializing Student Learning

Upon reconvening as a class, I ask Maribel, the A-person in her group, to begin our whole-class discussion in the 10-yearold-voice. When she finishes, I move on to Alejandro, the B-person in his group, asking him for the high school voice. Finally, I ask Elias, the C-person in his group, to provide the professor's voice. He explains, "A charged particle will

The Three Voices Strategy is a scaffold for students as they construct their understanding of complex ideas through interactive discourse.

accelerate from an area of high potential to an area of low potential. The gradient of the potential tells the magnitude of the force. This is like a charged particle rolling down an electrical hill. A steep hill means a greater acceleration of the ball. A larger electric potential gradient means a greater acceleration of the charged particle."

Convinced they are ready, I ask the class to write their own versions of these explanations in their notebooks. I expect each student to write a 10-year-old explanation followed by the high school student's and professor's explanations. Students have reformulated their conceptual understanding using different voices multiple times in small groups and whole class discussions. They are much better prepared to write precise, conceptually accurate versions of their understanding now than when they started. This is when I want them to memorialize their new understanding in their notebooks, creating a permanent record of their learning.

Fair Access to Physics

Joining an academic physics discussion can be intimidating, which is why I empower students to overcome this barrier by providing them with three voices to help them negotiate meaning. Students who otherwise might not have joined a physics discussion can participate more fully.

While they may begin speaking like 10-year-olds, many students like Maribel, Elias and Alejandro go on to study physics and engineering at elite universities like UCLA and Berkeley. Equal access to physics directly benefits individual students, but society is the real winner. To gain full access to the increasingly technical demands of society, students need the skills to engage in rich and complex discussions. Degrees in technical fields lead to high-paying jobs. Equitable access to courses that prepare students for these careers is important if we are serious about providing equal career opportunities to all students.

Giving my students access to those opportunities means offering them a voice in physics...three voices, actually.



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